Questioning Strategies

How can we use questions to encourage or discourage exploration & discussion?
Examples of Questions

Example Prompt 1: What do you notice about what that animal is doing?

Example Prompt 2: Describe what you notice about what that animal is doing.
Session Goals

• Experience and reflect on different types of questions

• Understand how the role of the instructor influences questioning strategies

• Practice matching instructional goals with specific questions
Types of Questions

Broad

Narrow
Comparing Broad and Narrow Questions

**Broad**
- have no specific answer
- answer requires higher-level thinking, exploration, observation, or an opinion
- Promote discussion and divergent thinking

**Narrow**
- have a specific answer
- answer requires recall of information
- Promote group response and convergent thinking
Read the handouts, then discuss

• What are some situations or goals for which narrow questions might be appropriate?
• What are some situations or goals for which broad questions might be appropriate?
• Any questions that come up for you from reading the handout.
Use of Broad Questions

- Broad questions tend to be under-utilized by classroom teachers and field instructors.
- Field instructors often use broad questions about feelings and values, but not about science.
- NGSS and Common Core encourage more use of broad questions to help students develop reasoning and critical thinking skills.
BFF Questions

• What do you notice?
• What do you wonder?
• What does that remind you of?
• How might you explain that?
• How is this similar/different from...?
• What do you think about that idea?
• Do you agree with...?
• Tell me more about that.
• Can you explain/show me your evidence for that?
• How can you be more sure?
• What surprised you?

**And any questions you don’t already know the answer to!**
“True dialogue occurs when teachers ask questions to which they do not presume to already know the correct answer.”

(Jay Lemke, education researcher, 1990)
Skit #1: The Sage on Stage

- Learning happens when the instructor gives information, and students receive it.
- Instructor is the recognized authority and the repository of information.
- Education is the transmission of information from one source to another.
Skit #2: The Guide on the Side

- Learning is through shared inquiry and collaborating in investigations.
- Focuses on the thinking, or cognition, of the student.
- Students express their ideas, expose any conflicts, and are guided to either reinforce, build upon, or replace their ideas.
Skit #3: The Entertainer

- Learning should be fun!
- Focus is on the instructor’s engaging performance and delivery of information.
- Students may be actively entertained, but probably not intellectually engaged.
Quotes from Field Instructors:

“I used to eat fake scat on the trail with kids, until I realized that was the main thing they remembered afterwards.”
- Field instructor

“Because children are genuine and authentic, I should be too. I found that my teaching really opened up once I let go of the idea that I had to have a certain persona around students.”
- Field instructor
Exploration Goals

Goal 1: Help students make better observations

Goal 2: Help students ask questions

Goal 3: Help students connect past ideas and new experiences

Goal 4: Help students make explanations based on evidence

Goal 5: Help students think with others

Goal 6: Help students develop scientific argumentation skills
Activity Lab

**Goal**: Plan questions for a common instructional situation in your program.

**Overview**: Work with a partner to identify goals for the activity, look for opportunities to insert broad questions, and determine a sequence of broad questions, narrow questions, and content delivery that matches your goals.
Why is planning questions important?

- Helps ask productive questions, even in stressful situations
- Causes instructors to think about potential student responses ahead of time
- Planning does not take the place of improvising—they work in tandem!
“An expert is a man who has made all the mistakes which can be made, in a narrow field.”

-Niels Bohr, 1990
Reflection

- What would you like to remember about how to use questions to encourage student exploration & discussion?
- What other situations in your instruction could use more question planning?
- How will you incorporate these ideas into your practice?
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